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SPIRITUOUS LIQUORS,

With Regard to their Effects on HEALTH;

In which the comparative Wholesomeness of

R U M and B R A N D Y

Are particularly considered.

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L O N D O N :

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A N
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O N
SPIRITUOUS LIQUORS.

THE custom of drinking Spirituous Liquors is now so prevalent, that the consideration of their effects on health, in order to a right choice and proper use of them, is become a matter of very great consequence.—The difficulty of the subject, as it requires a peculiar knowledge in chemistry, physiology, and pathognomonic observation, has, nevertheless, discouraged attempts to give the public such a system of the principles and relative facts, as might communicate just and demonstrative notions of it.—From this want of sufficient lights for understanding the nature of Spirituous Liquors, and judging of the comparative goodness of the several kinds, many errors have taken rise with respect to them : some of

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which have, by design or accident, been so widely propagated, as to be detrimental to a great number of people, by leading them to prefer the less wholesome, or bad kinds of these liquors to the good.

AMONG these errors, respecting the choice of Spirituous Liquors, there is one of very momentous consequence, which has gained much ground of late ; and, if not checked, will, in all probability, become still more general. It is *the believing BRANDY to be a more wholesome distilled spirit than RUM*.—This false notion has got possession of the minds of many people : though it is not a clear point, whether it owed its origin to a real mistake, or was artfully broached to promote the selfish and sinister views of some designing persons in trade. For it has, indeed, been asserted lately in the public papers, that the French, who are much interested in establishing a preference of Brandy to Rum with us, have engaged some practitioners in medicine to lend their venal aid, in giving credit to the unjust pretension of a reason for such preference.—But, from whatever source this error did originally flow, the extensiveness and force of its prejudicial effects are the same : as it has, by some means or other, been so diffused, as to influence great numbers of persons, both in town and country.

THERE is not the least foundation, nevertheless, for the belief, that Brandy is superior to Rum in
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any of their qualities which can effect health : on the contrary, it is evident, from the clearest proofs, which subjects of this nature can admit of, that the drinking Rum in moderation is more salutary, and in excess much less hurtful, than the drinking Brandy.—But, however ill-founded the notion of the superiority of Brandy to Rum may be, it has produced very detrimental consequences to the public, in several different ways. By causing a much more general use of Brandy than before, it occasions a greater number to run the risk of impairing their health : as they who drink it are not only liable to suffer more in case of excess, even from the best Brandy, than from Rum, but to be hurt, also, by moderate quantities, in consequence of the present almost general adulterated state of it. Besides this, by lessening the demand for Rum, it has done mischief to our West-Indian colonies ; and been injurious to our balance of trade, and political interest, by augmenting the consumption of a foreign commodity, purchased for money of our rivals, to the exclusion of one produced in our own dominions, and supplied in exchange for our manufactures and domestic products.

It is, therefore, much to be regretted, that a notion, which, if duly examined, will be found to want the support, even of any specious or plausible argument, should be passively suffered to be the cause of so many evils : as it seems to have maintained its ground, merely from the neglect of its being properly opposed and confuted. For, it

may be concluded, with great reason, that, if the public were assisted with just lights for examining fairly the comparative wholesomeness of Rum and Brandy, the truth of the superiority of Rum would be so glaring, as could scarcely fail to banish the prejudice now subsisting from the minds of those, who would take the least trouble in considering the subject: which, as it respects the health of all who drink Brandy habitually, or are disposed to do so, is a matter of very important concern to them.—The extirpating this error furnishes, therefore, one strong inducement, among others, to the inquiry into the principles on which the salubrious and noxious qualities of Spirituous Liquors depend; and an examination, by the application of those principles, into the merits of the particular kinds.

THE explaining the nature and operation of Spirituous Liquors, with relation to their effects on the human body, is not, moreover, attended with insurmountable difficulties.—From experiments, shewing the particular action of distilled spirits on animal substances;—from appearances, in the dissected bodies of persons who have died by the immoderate use of such spirits, taken in a noxious state;—and from observations on the nature of the diseases and symptoms, by which these persons were brought to their end; we may with certainty collect what the particular operation and effects of these spirits are, in destroying the health of those who drink them in excess. And from the

the chemical examination and analysis of the several kinds of such spirits, we are enabled to judge, why, and how, they vary in their effects from each other. On these principles, it is not difficult to point out, in a satisfactory way, to intelligent and attentive persons, even though not at all studied in medicine and chemistry, the nature and effects of distilled spirits; as far as respects their wholesomeness, and the difference, in that point, of the various kinds from each other.

PREMISING these circumstances, it must appear very conducive to the public good, that such an explanation, and just view of the relative facts and principles should be given, as would elucidate the truth respecting the salubrious or pernicious qualities of Spirituous Liquors, or their several kinds; and prevent the future, as well as remove the present impositions, in a matter pregnant with so much harm both to particulars and the community.—I have thence, on the total neglect of such an attempt by others, been induced to take this task upon myself: and I hope to offer such valid reasons for what I advance, as may afford conviction to every candid reader, who will bestow a moderate attention on them,

I MEAN, however, to confine my disquisition to the simple kinds of Spirituous Liquors, or the counterfeit substitutions for them; and not to extend it to the compound cordials, which are extremely
various,

various, and possess additional qualities to those of the simple spirits, according to the different ingredients in the several compositions of them. Such cordials, though they commonly pass under the denomination of Spirituous Liquors, and particularly one composition of this kind, called Geneva, which is very much drunk among the lower people, are yet not to be classed with the simple Spirituous Liquors, in an examination into their general nature or distinct properties. The qualities of the various ingredients, added to the spirit in such compositions, necessarily vary their effects on those who drink them : and each different kind requires, therefore, a particular consideration with respect to such qualities, that would be entirely foreign to the subject in view here : which is solely the properties of that spirit obtained by distillation from fermented liquors.

I SHALL, therefore, in the following pages, first shew what the qualities are, by which Spirituous Liquors, improperly taken, do mischief to the human constitution.—I shall next demonstrate, that these qualities subsist in a higher degree in some kinds of Spirituous Liquors, now in use, than others :—and I shall lastly distinguish what those kinds are, and in what particulars their depravity lies.

THE disquisition of these several points leads of course, in some degree, to a scientific research into the subject : but I shall, in my conduct of it, avoid
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as much as possible, all abstrusity ; and accommodate both the language and matter to the comprehension of every liberal reader. To render the perusal less tedious to such, as may not be disposed to enter into the minuter consideration of the more abstracted points, I have thrown the greatest part of the detail explanation of principles and facts into notes : the reading of which may be omitted at pleasure without occasioning any breach of connection in the body of the work.

IN the prosecution of the design of inquiring into the absolute or comparative, wholesomeness of the various kinds of Spirituous Liquors, by an investigation of their several qualities, and of those of the elements or ingredients that compose them, I shall, for the greater perspicuity, advance the following general propositions : each of which, I shall afterwards endeavour to explain more minutely ; and demonstrate, by conclusions from incontestible doctrines, or deductions, from well established facts.

PROPOSITION I.

THAT distilled spirits, when rendered *pure and free from every other substance*, except that proportion of phlegm, or water, which can never be separated from them, are absolutely *alike* in their *qualities* ; and *of the same identical nature*, from whatever kind of fermented liquor they may have been originally obtained.

THAT

II.

THAT distilled spirit, when in a *pure* state, and separated from all other bodies, except some phlegm, has a violent astringent action on the solid parts of animals, a coagulative effect on the fluids, and a power of diminishing the irritability and sensibility of the nerves ; which qualities render it injurious to health when drunk in great quantities, or frequently with continuance.

III.

THAT spirits, when *originally distilled* from the various fermented liquors which afford them, *rise combined or united with volatile oils and acids, that correct and dulcify* them (a) : counteracting
their

(a) It has been long known in chemistry, that if rectified spirit be mixed with any strong acid, they will combine together or unite ; and, being distilled, will come over in a combined state, where the acid will appear to be sweetened, and the spirit to have lost its astringent and fiery taste.—This method of forming a compound of ardent spirit, and the acids termed mineral acids, viz. the vitriolic, nitrous, and marine acid ; (or, in medicinal language, oil or spirit of vitriol, spirit of nitre, and spirit of salt ;) was introduced into pharmacy, under the name of *dulcification* of the respective acids : but as the ardent spirit
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their noxious power, and rendering them not only less hurtful than when in a pure state ; but, with regard to such as are most corrected, even salubrious, or wholesome, if used properly with moderation.

IV.

THAT, in *genuine* BRANDY, the spirit is *dulcified*, by combining or uniting with the native acid of the grape, and the acetous acid generated in the fermentation : which considerably checks the violence of the astringency, and other unwholesome qualities, that the spirit would have if it were *pure*.

THAT

is sweetened as well as the acid, and rendered mild in its flavour and qualities so long as its union with the acids continues, the dulcification is mutual : and the ACID may, with equal propriety be said, also, to be DULCIFIED. I have, therefore, adopted the expression here in that sense : and, as I shall have frequent occasion to mention it hereafter, I shall call the change made in ardent spirit, by its union with any acid, the DULCIFYING it. — From this principle, as we shall see below, results a considerable part of the difference of distilled spirits from each other : and it is wholly through the application of it by art, that counterfeit Brandy is made from malt-spirits only.

V.

THAT in RUM, the spirit is not only *dulcified* by the *acid* generated in the fermentation ; but its noxious qualities corrected and repressed in a much more effectual manner, by the *volatile oil*, which rises with it in the distillation ; and sheaths its pungency, so as to counteract in a much higher degree, the offending qualities, than can be possibly effected through the dulcification of such spirit by acid, as in the case of Brandy.

VI.

THAT the *Brandy* now generally brought to us from France, sophisticated by the addition of other spirits, or of counterfeit Brandy, *has similar qualities to pure ardent spirit* ; and, therefore, is noxious to the health of those who drink it freely.

VII.

THAT, consequently, *the most genuine Brandy is less wholesome than Rum* : and the counterfeit or sophisticate kinds of it, very detrimental to those, who use them in considerable quantities.

THE FIRST proposition, *that all distilled spirits are alike when pure*, is so generally admitted, as
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leaves no occasion to dwell long on it here. It is sufficient to observe, that the kind of fluid obtained by distillation from fermented parts of vegetables, and distinguished by the name of *ardent spirit*, and *vinous spirit*; or, in common language, *distilled spirits*, and *spirituous liquors*; is always generated by the same process in nature, called *vinous fermentation*; and produced from the same kind of substance, called the *saccharine juice of vegetables*: which saccharine juice, when rendered pure, is found to be the same, in all the vegetables, or parts of vegetables that afford it. The ardent spirit, however, when formed in the fermentation of the several various kinds of vegetable matter, is always combined or united (*a*) with other substances, principally volatile oils, and acids, that are generated in the fermentation, or subsist natively in the subject vegetable matter: and the spirit rising in distillation thus combined with them has different properties, at least with respect

(*a*) By the word *combined*, as here used, is meant, that union of two bodies with each other, on their being mixed together, in which some of the properties they had, while separate, are diminished, changed, or lost: and a new compound substance produced different from either of its two constituents.—In this particular, *combination* differs from meer mixture; by which two bodies may be conjoined in one mass, and yet not act on each other, so as to make any alteration in the properties of either.

respect to the degree, from those which it possesses when in a pure state.—But these substances, with which the spirit is originally so combined, may be separated from it by rectification, that is, repeated distillation, simply, or aided by other means, in such manner, as to render it pure, except with regard to some quantity of phlegm, which will always remain mix'd with it.—When thus perfectly rectified ; or, in other words, brought to a pure state ; the spirit, whatever kind of fermented liquor it might be originally obtained from, will, in any method of trial, be always found to have the same (*a*) properties, and effects : allowing for the strength ; that is, the proportion of real spirit to the phlegm, from some quantity of which it can never be freed.

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(*a*) The sameness in ardent spirit, from whatever fermented liquor originally distilled, when highly rectified, and rendered pure, is known practically, as well as speculatively.—Formerly, when Brandy was the only distilled spirit in common use, the rectified spirit employed in medicine, and various arts and trades, was solely obtained from thence ; and vended under the name of spirit of wine : as, indeed, it actually was spirit extracted from wine. But, on the discovery of the methods of procuring a distilled spirit much cheaper from malt, the low price of it occasioned that spirit to be substituted for Brandy, to procure a rectified spirit: which was found to be so much the same with what was afforded by Brandy, that it took its place and name ; and was used both for medicinal

THE SECOND proposition, that *distilled spirit in a pure state has a violent astringent action on the solid parts of animals ; a coagulating effect on the fluids ; and a power of diminishing the irritability and sensibility of the nerves ;* will be allowed to be equally true with the first, by those who are well acquainted with the subject.—These astringent and coagulating qualities of pure spirit, operate in a certain proportion and manner, on the living human body, when such spirit is drunk. Whence by the constant improper use of it, not only the health is impaired ; but frequently the animal œconomy is so much disordered, that even life itself is at length destroyed.—In persons, who continue to drink distilled spirits in this noxious state, till they receive injury from it, we see gradually come on, a tabidness or wasting of the extremities, the skin of which seems shrivelled and dry. This tabidness is accompanied with a nervous weakness, or tendency to palsy ; as appears by the shaking and debility of the parts.—It is obvious, that these effects are caused by the constriction and corrugation of the fibres ; the coagulation of the lymphous humour ; and the general diminution of power in the nervous system : the fluids ceasing to be able to pervade the vessels as well from their contracted and indurated state, as from their own want of due propulsive force.—This
change

cinal and other purposes, under the name of spirit of wine ; with which it has a real, as well as apparent, sameness of nature.

change is so great in the exterior parts, as to be apparent in the very visage of these so affected; particularly in younger women, who have been very intemperate in the use of bad spirits. For the form of the face is altered in so peculiar a manner, that the cause of it is distinguished by a common eye, without the least reflection.——In the more advanced stages of distemper, caused by the long immoderate use of noxious spirits, the appetite is lost, the digestion extremely disordered, and the secretions almost wholly suppressed. It is remarkable, also, that the coagulating power of ardent spirit on the animal juices, checks the natural ferments, on which both nutrition and secretion depend, in such manner, that the spirit itself serves in the place of aliment; and supports weak life with the aid of very little food of other kind.——At length, however, the effects of this perversion of the animal œconomy prevail over the efforts of nature; and the wasting and weakness increase, till life is extinguished, from the extreme debility, with which the vital functions are performed.——This is the manner in which noxious spirits destroy, when no particular chronical disease is brought on in the progress of their operation. But more frequently the intestines are so much affected, as to induce fatal disorders in the earlier stages of the diseased state, arising from this cause. The liver, in such cases, is, for the most part, rendered schirrous: and a dropy ensues; which proves, in a short time, a mortal symptom.——The astringent and coagulating effects of the ardent spirits are very evident,

on examining, by dissection, the bodies of persons who have died in this condition. The whole liver is often found converted to a *schirrus* of peculiar hardness ; and made wholly incapable of its office of secreting bile. The mesentery is sometimes enlarged in an extraordinary degree : and its minute glands amazingly infarcted and tumified, so as somewhat to resemble bunches of decayed grapes of a brownish livid colour.—Every disease, or symptom, indeed, occasioned by the use of Spirituous Liquors, may, from its very appearance, be justly ascribed to their astringency of the fibres, coagulation of the juices, and injurious action on the nerves ; (a) and serves to evince the
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(a) This action of ardent spirit on the nerves is evident in the case of those, who are killed by drinking an excessive quantity of it at one time : of which, during the period that Geneva was so generally drunk amongst the lower sort of people, frequent instances happened.—There are two ways, by which the spirit becomes fatal to such as die under these circumstances : but both have their foundation in the same cause, acting more or less violently.—Some of the persons, who owe their death to this excess, are, after drinking a certain quantity of Spirituous Liquor, seized with strong convulsions, and expire in a very short time. In this case, the action of the spirit on the nervous system is so great, that it entirely destroys their irritability ; and, consequently, puts a full stop to the performance of their office in the vital œconomy. — Others are taken with a *stupor*, or total insensibility ;
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noxious effects of distilled spirit to be owing to these qualities.—That such spirit possesses them in proportion, as they approach to a pure state ; that is, when not duly corrected or dulcified by an union with volatile oils, or acids ; has been before sufficiently proved.

THE THIRD proposition that *spirits, when originally distilled from the various fermented liquors which afford them, rise combined or united with volatile oils, and acids, that correct and dulcify them,*

but do not go off under several hours ; during which, the vital action seems to cease gradually. In this case, the irritability is not wholly suppressed on a sudden, as in the first, but by a slower, and less violent effect.—The ardent spirit in these instances acts on the nerves distributed on the surface of the intestines ; and, being diluted by the secretion of lymphous fluid continually made there, a considerable quantity is required to produce this effect. But it is said to have appeared from experiment, that, by an immediate application of a small quantity of Alcohol, or highly rectified spirit of wine, to the extremity of a divided nerve of a beast, convulsions, and death will instantly follow. I have not seen the fact myself : but it is related on good authority.—The very great astringent power of pure ardent spirit on the vessels of living animals, which must be ascribed, in a great degree, to their action on the nerves, is obvious, in its styptic effect, when applied to small divided blood vessels, where it instantly stops the effusion of blood.

them, diminishing their noxious power, is easily demonstrated both from experiment, and observation.—That there is a difference between spirit rendered pure by redistillation, and those kinds that are in the state in which they rise on their first distillation, is evident from the various peculiar flavours and scents, by which rum, brandy, melasses, and malt spirit, are most palpably distinguished, as well from such pure spirit as from each other. As all such peculiar flavours and scents are lost, when the respective spirits have been sufficiently rectified by redistillation; which deprives them of those other substances they were combined with when they were distilled from the fermented liquors that afforded them.—That such spirits as have not been redistilled have much less astringent and coagulative power than those, which have been rectified and rendered purer, may be easily perceived by trial of their action on animal substances steeped in them; and their styptic effect on the divided blood vessels of living animals.—The same difference, with regard to the degree of these qualities, is obvious, as to spirits distilled from different fermented matters, and not rectified. For some of them are much milder, and recede more from the noxious state of the purer ardent spirit than others.—This difference from each other will, of course, be in proportion to the quantity, and kind of substances, with which they are combined or united in the fermentation or distillation; and consequently, corrected or dulcified when they first come over.

THE substances, which, by uniting with purer spirits, counteract their noxious qualities, are, as was before specified, *volatile oils* generated in the fermentation or distillation ; and *acids*, either such as were native in the particular vegetable matter, which was the subject of the fermentation ; or such as are generated in the fermentation. (a)

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(a) The acetous fermentation, or, in other words, the kind of fermentation which generates vinegar, always goes on in some small degree along with the vinous fermentation, or that which generates the ardent spirit ; and of course, produces some proportion of acetous acid, along with the spirit. This is evident in the distillation of malt spirits, where an acid is found to be left behind ; which can have no other origin than the acetous ferment : there being no native acid in the malt, which is the subject of the fermentation.—A part of this acid combines or unites with the spirit during the fermentation. The other part remains mix'd, but not combined or united with it : and such of it as is more volatile, rises with the spirit in the distillation, while the more fixed is left behind in the still. As a proof of this, the same is found to happen, if vinegar be added to pure or rectified spirit ; and they be distilled together.—All spirits, from whatever kind of fermented liquor obtained, are, therefore, milder and less astringent as they rise in the first distillation, than when in a pure and rectified state : being thus dulcified by their union, with a proportion of the acetous acid, as well as some proportion of volatile oil, produced in the fermentation.

These corrective substances are in part combined with the spirit before the distillation, and rise united with it ; and in part uncombined with it before the distillation, but, rising with it then, unite themselves gradually with it afterwards. It is, from such union of the spirit with the corrective substances, as takes place after the distillation, that Spirituous Liquors are in general so much improved by time.—On keeping, especially in the cask (*a*), where there is a large quantity together

(*a*) The fact, that Spirituous Liquors improve much more with time in the cask than in the bottle, is well known from observation : but the reason of that difference is not hitherto demonstratively ascertained. It is commonly ascribed to the escape of a fiery volatile part, which is supposed to find its way out of the cask more easily than out of the bottle. But the existence of such a fiery volatile part is not in the least proved by any experiment or known fact : and the principle we have established, of the union of the corrective substances with the spirit, must be allowed to be the real cause of the improvement in question. It seems therefore most feasible, to place the reason of this difference in the degree of improvement, betwixt Rum kept in the cask and that kept in bottles, in the following circumstance.—The combination of two different kinds of bodies interspersed in any fluid is attended, in the act, with an intestine agitation of the parts of such fluid, from the combining particles operating on each other by their specific attractive powers, which draw them with celerity to a close union, when

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together, they become gradually milder, and lose that astringency, which manifested itself before this change in a seemingly fiery sensation in the mouth, and throat of those who drank the spirit.

In the kind of spirits where acid abounds, they gain by time, in consequence of that dulcification by it, which succeeds the distillation, a grateful flavour and odour : and, in those, where volatile oil abounds, their seeming rankness of smell and taste gradually goes off, or sometimes is converted, by degrees, into a species of perfumed odour.—

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they come within a certain distance to each other: and we distinguish this state of a fluid, when sensible by its effects, by the name of *fermentation*. The intestine action is, in all such cases, necessarily greater, when it happens in large quantities of the fluid, than in small. As the motion of every part has a reciprocal effect on all the others : and the particles are consequently, by their being more put in motion, more speedily brought within the sphere of each other's attraction. We see this in the fact itself : as excessive ferments arise in large masses of some kinds of matter, that are not sensible in the least, in smaller masses of the same.— In the cask, therefore, the intestine motion produced in the Rum, from the combining action of the corrective substances and the spirit, being much greater than in the bottle, the particles of them are in proportion brought sooner within the sphere of their mutual attraction : and the change in the Rum, owing to their union, consequently, more quickly completed.

The wholesomeness of the distilled spirit is, also, in proportion improved, through the union of the spirit with the corrective substances, which time produces : as it causes a privation of the violence of those qualities, above explained, which render the spirit noxious.—On these principles, depend not only the difference of spirits, undeprived of those substances, which rise with them in the first distillation, from those which are rendered pure by subsequent rectification, but likewise their superiority over each other. As, for instance, in malt spirits, where there is no acid to dulcify them, but such as is generated in the fermentation ; nor any volatile oil to correct them, but such as is produced in the distillation ; the noxious qualities are much less counteracted than in Rum, or Brandy. The same holds good of melasses spirit. For though, from the kind of materials whence it is obtained, it seems to have a considerable affinity with Rum ; yet, from the circumstances of the fermentation, as it is effected in this climate, and from the manner of distillation practised here, it is so defective in the volatile oil, which is the great corrective, and gives the characteristic to Rum, that it is most palpably different from it in taste and flavour, as well as in its salubrious qualities.

In the most perfect of the distilled spirits, this melioration of them, by their union with the corrective substances that rise with them, so diminishes the force of those qualities, which make the ardent spirit noxious when pure, and reduces it
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to a mild and gentle state, that, taken in moderation, they are not only safe and wholesome, but, even in some cases, salutary and medicinal.—Their astringency, when duly restrained, renders them invigorating and cordial : and their power of checking the animal ferments, renders them antiseptic : that is opponent to a putrid disposition.—Hence in very cold countries, by their cordial effect in supporting the *vis vitæ*, and by their lessening the sensibility and irritability, they enable the tenderer races of mankind to bear that degree of cold, they could not otherwise endure at all ; or not without mischievous consequences.—In very hot countries, they prevent, by the same astringency, that extreme relaxation, which is generally so incommodious and debilitating ; and by their antiseptic power, that tendency to a putrid habit, which induces the most dangerous and troublesome diseases. Indeed, wherever a putrid disposition, and the consequential relaxation and weakness, are attendant on any febrile or other diseases, Spirituous Liquors, are on the same principles, the most efficacious remedy.—In temperate climates, the use of them is in general an innocent refreshment and regale, when confined within the bounds of moderation and temperance. Particularly those kinds, in which the properties of the pure ardent spirit are most corrected in the manner we have above explained.

THE FOURTH proposition, that, *in genuine Brandy the spirit is dulcified, by being combined or united with acids,*

acids which considerably check the violence of the noxious qualities, admits of easy proof.—It is evident, from the difference of their flavour and smell, that the qualities of Brandy vary from those of pure or rectified spirit : and, from the former's not exciting the fiery sensation in the mouth and throat, which is caused by the latter, it is apparent, that the astringency in Brandy is much less than that of pure spirit. The same is confirmed by trial, on steeping animal substances in each of these kinds of spirits.

THAT this difference of Brandy from pure spirit, is owing to dulcification by acids, is deducible, also, from its taste and scent : the same with which may be given to pure spirit by artificial dulcification, by means of some kinds of acid.—But the presence of acid in Brandy, and its effects on the spirit, are more certainly demonstrated by redistillation. On examination, after the spirit is risen, acid will be found in the residuum or remains ; and the spirit itself will have acquired the qualities proper to it in its pure state, in proportion as the acid has been thus separated from it.

GENUINE Brandy of the best kind is distilled from wine, obtained from the juice of the grape. An inferior kind, also, is obtained from the fermenting a weaker must, procured by adding water to the marc, or solid part of the grapes remaining after the juice, or must, has been pressed out. In the fermenting this weaker must, gained from
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the marc, it is practised to add other fermentable matters to increase the quantity of spirit : and these, containing less of the corrective substances than the juice of the grape, the Brandy thus made, is, consequently, inferior to that distilled from wine.

In the wine of the grape, whence the good Brandy is obtained, there is a large proportion of native acid : which, together with the acetous acid generated in the fermentation, as mentioned in the comment on *proposition the third*, unites with the spirit ; and dulcifies it to a considerable degree.——In many cases, the stone of the grape is broken in the pressing, and yields a small proportion of bitterish oil, which combines with the spirit, rises with it in the distillation, and gives the Brandy a nut-like flavour, that is esteemed one of the criterions of its being genuine and good.——The union of the vegetable acids with the spirit, in this natural way, is so strong, as has been before mentioned, that the compound bears the addition of water in any quantity, without causing a separation of the two constituents : which is a very material property with respect to the wholesomeness of the spirit. For in the artificial dulcification, which we shall have occasion to explain more particularly below, of pure spirit by mineral acids, as practised for counterfeit Brandy, it is quite otherwise : and a separation always follows, on diluting with water, that entirely destroys the corrective action of the acids on the spirit.

GENUINE

GENUINE Brandy, being thus dulcified by vegetable acid, is considerably less astringent and coagulative than pure ardent spirit ; and may be reckoned the most wholesome of the Spirituous Liquors in use with us, except Rum and Arrack ; in which the spirit being more effectually corrected by an union with volatile oils, they are consequently more salubrious.

WHAT has been here advanced, as to the nature and qualities of Brandy, must, however, be understood to hold good only of such as is genuine : but the far greatest part of what is drunk with us, at present, is sophisticate ; not excepting even that brought over from France. This will appear an uncontrovertible matter of fact, when we consider, that the quantity of distilled spirits now consumed in Britain, under the name of French Brandy, is far greater than the whole amount produced in France, of such as is real and genuine : and it is well known, that a large proportion of the Brandy, France affords, is not brought to us ; but used there, or in many other places whither it is sent.—If further confirmation of this assertion could be wanting, it might be proper to mention, that great quantities of malt spirits, and counterfeit Brandy, are sent from hence, in order to sophisticate the Brandy made for importation to us. So that we are not to reckon on finding the qualities, above ascribed to good Brandy, in that which we are able now to purchase here ; but must judge of it by the properties of the sophisticate and coun-

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forfeit.

terfeit.—How noxious these properties are, and what the preparation of such Brandy is, we shall explain below, in our comment on proposition the seventh.

THE FIFTH *proposition*, that, in RUM, the *spirit* is not only *dulcified* by an union with the acid generated in the fermentation, but corrected more effectually by volatile oil generated both in the fermentation and distillation, will be found verified by the following proofs.—The fact itself is apparent, even to the senses, from the taste and smell of Rum ; and may, otherwise, be easily ascertained by the examination of the residuum, or remains, left on distillations repeated till the *spirit* be pure.—The saccharine matter fermented, in order to the making Rum, produces in hot climates a copious quantity of volatile oil, which unites with the spirit during the fermentation. Part of this oil combines then with the spirit ; and comes over in the distillation united with it : and the other part rises uncombined with the spirit, but unites itself with it by slow degrees afterwards.—By the manner of distillation of Rum, a proportion of volatile oil is, also, produced in that operation, by the action of the heat on the saccharine matter, in the distilling liquor, which has continued unchanged by the fermentation, and adheres to the still. A part of this oil, likewise, is combined with the spirit in the distillation ; and rises united with it : while another part comes over uncombined with the spirit, but unites with it

it slowly afterwards.—The volatile oils that thus come over, without being combined with the spirit, give to fresh distilled Rum that rankness of smell and taste, which are sometimes found in it : and the degree of the astringent quality that remains, for want of the spirits being duly corrected by an union with the full proportion of these oils, causes that degree of pungent fiery taste, perceived in it at the same time. But the union with the spirit of the oils, which were uncombined with it in the distillation, going gradually forwards, the whole becomes at length united : and the rank taste and smell of the Rum are then converted into such as are grateful.—The astringent and coagulating powers of the spirit are, of consequence, greatly corrected ; insomuch that they cease to be noxious to those who drink the Rum in moderation.

The corrective power of volatile oils on the injurious qualities of ardent spirit, is much greater than that of dulcification by acids : and these qualities are necessarily much more restrained, or suppressed in Rum than in Brandy, according to the difference of those distilled spirits, with respect to their component substances, as above explained. This may be experimentally verified by trial, if any proper animal substance be steeped for a long time in both : when it will be found, that the plumpness, and softness of such substance, will be retained much more under the action of the Rum than under that of the Brandy ; though the Brandy,

if genuine, will not contract and harden it, in near so great a degree as pure or rectified spirit.

THERE is another circumstance, attending the combination of volatile oils with ardent spirit, different from that of acids with such spirit.— This is, that the union of the two bodies is stronger in the first than in the other; and does not admit of their being so easily separated by redistillation.— On distilling Rum and Brandy, it will be found Rum will, from this principle, bear that operation with much less change than Brandy. For, if the Rum distilled, be so perfect with respect to the union of the volatile oil with the spirit, either in consequence of its being long kept, or its own original nature, as to be free from all rankness and appearance of fiery quality, it will retain its properties after the second distillation in a greater degree than Brandy; which latter will greatly lose its peculiar smell and flavour, and be brought much nearer to the state of pure ardent spirit.— It is to the union of volatile oils with the spirit, being stronger than that of acids with it, this resistance to a greater separation by distillation must be imputed; and not to the volatility of such oil being greater than that of acids. For, if new Rum, in which the oils are not perfectly united with the spirit, be distilled, a more considerable change will be perceived in it, and a much greater part of the oil will be found not to come
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over, than would rise in the case of the same Rum kept till it be old : which shews, that the oils not suffering a separation from the spirit by the redistillation of the Rum, is not owing to its volatility, but to such a stronger union with the spirit as makes them rise together.

THE superiority of Rum over Brandy arises, therefore, from the spirit's being principally corrected in Rum, by an union with volatile oils, that more effectually counteract the noxious qualities of pure ardent spirit, than the dulcification by acids, which is the principal corrective in Brandy.—It must be, however, allowed, that all Rum is not equally excellent. For the proportion and qualities of the volatile oils, in the fermented liquor for making Rum, vary much according to the materials produced in different sugar plantations : and the different management of the distillation, with regard to the removing or leaving the matter adhering to the still, has no small share in the goodness of it. In the product of some plantations, a great length of time is necessary to bring it to a perfect state : in others, a less. There are not wanting instances likewise, where the *fresh* distilled Rum has all the good qualities, that are in general to be found in the product of other plantations, after it has had the utmost improvement of time.—This peculiarity has, without doubt, its cause in the volatile oil being of such a nature, that the whole of it unites immediately with the spirit in the fermentation and distillation :
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and renders the Rum as perfect at first, as that, where such peculiarity is wanting, becomes by the most mature age, in consequence of the slow union of the oil and spirit. Where such an extraordinary property has been observed in the Rum, it has in general been wholly ascribed to the qualities of the soil, on which the sugar canes, affording the materials, were raised : but certainly, somewhat of it, is, also, owing to the conduct of the distillation. This operation, in the case of the fermented liquor of these materials, may, from their generating a great quantity of volatile oil in the fermentation, admit of a different management, to what is generally proper to be practised in the case of common materials, with relation to the keeping the still free from any concremented matter, that will burn if the fluid be drawn off too low : the care of avoiding which, beyond a certain degree, makes the most critical point in the conduct of the distillation. For, if as much burnt oil of the saccharine matter, adhering to the still, was produced in the making this kind of Rum as the common, it would necessarily acquire time to effect such an union of the oil with the spirit, as would suppress all the rankness of smell and taste, which it has till they be perfectly united. Whence it is evidently requisite, a cautious regard should be had, that no more oil be produced than is necessary for correcting the spirit, according to the proportion of volatile oil generated in the fermentation : otherwise, not only more time is demanded, but the Rum will

will never wholly lose the depravity, which the burnt oil, uncombined with the spirit, imparts to it.

THAT Rum is a more safe and wholesome distilled liquor than Brandy, is evident from all the several particulars we have above enumerated, with respect to their nature and properties. But if we examine into the impracticability of obtaining genuine Brandy; and consider the mischief and hazard, that arise from the free use of the sophisticate or counterfeit kinds, as we shall below explain them, from the qualities of the ingredients, and the manner of composition; the preference of the use of Rum to that of Brandy, must appear in the most strong and convictive light.

The SIXTH proposition, that *the Brandy now generally brought to us from France, and sophisticated by the addition of other distilled spirits, or of counterfeit Brandy, has similar qualities to pure and ardent spirits, and is consequently noxious to the health of those who drink it freely*, is equally certain with any of the preceding: but a more detail examination of various facts is necessary, in order to afford a satisfactory demonstration of the truth of it.

BRANDY, to be genuine, ought to be distilled from wine made of the juice or must of grapes, without the addition of any other matter, either to the must or wine.—The sophistications, which may be practised on it, are of three kinds: the addition of somewhat, that will *produce spirit*, to the
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the *must* before fermentation : the addition of some *other spirit* to the wine before distillation : and the addition of *such* spirit to the Brandy itself *after* the distillation.

ALL these methods have been pursued ; and it may, therefore, be proper to point out the particular manner in which they are practised ; and the different qualities of the Brandy sophisticated in each way ; particularly, that which is now most followed.

THE *first* of the above enumerated methods of sophistication of Brandy : is performed by the addition of other fermentable matter to the must before the fermentation. This of course increases the quantity of Brandy, in proportion to the increase of the spirit produced, by the matter so added. It was formerly the principal way of sophisticating Brandy, and it is the most innocent. It is not now much followed where the wine distilled is made of the must of the first pressings of the grape ; but is, however, practised with respect to the weak must, obtained from the washings and second pressing, fermented to make an inferior kind of Brandy : because that must is scarcely sufficient of itself to support the due degree of vinous fermentation.—This method of sophistication does not produce so bad a kind of Spirituous Liquor as the other. But the quantity of ardent spirit, being augmented by it, in proportion to the native acid of the fruit, which should dul-

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cify it, in order to render it wholesome, it is, therefore, less corrected; and approaches accordingly to that state of purity, in which, as has been repeatedly explained before, the noxious qualities take place. This kind of sophisticate Brandy is, evidently from hence, inferior in flavour to the genuine; and, in a certain degree, recedes from the nature of those distilled spirits, which are safe and wholesome.

THE *second* method of sophistication of Brandy, is, by adding spirits, already distilled, to the wine, or fermented must, before the distillation of the Brandy. The spirit employed for this purpose, at present, is that obtained from malt: because it is now much the cheapest that can be procured.— But it must be previously rectified for this purpose, and, indeed, for making any palatable Spirituous Liquor whatever, for reasons, I shall have occasion to mention below: and this rectification bringing it to the state of pure ardent spirit, it acquires necessarily then the noxious qualities, before shewn, *in proposition the second*, to be found in such spirit.— The depravity of this kind of Brandy will be the same with that of the first kind of sophistication, but in a greater degree. For the malt spirit here added to the fermented liquor, being deprived, in the rectification, of the acetous acid, which all spirits gain in the fermentation and first distillation; and meeting with only a small proportion of uncombined acid in the wine, or fermented must, for its dulcification there; it will of course come

over nearly as so much naked ardent spirit mixed with the Brandy ; and will, consequently, in proportion, exert its noxious qualities on those who drink it.

THE *third*, and by much the most frequent sophistication of Brandy, is, by adding other distilled spirits to it after its distillation.—This is either done by the addition of simple rectified spirit ; or what is much more general, by that of counterfeit Brandy.

IN the sophistication of Brandy by simple rectified spirit, the quantity added must not be large : because it would proportionably diminish the flavour of the Brandy ; and render its action in the mouth and throat fiery : which, being obvious to the senses, would sink the value of it with respect to the saleable qualities, so as to balance the advantage of the increase of quantity.—But, in proportion to the quantity of rectified spirit used in this kind of adulteration, the Brandy is depraved with regard to its wholesomeness, on the same principles, as in the two preceding kinds of sophistication.

THE far most general method of sophistication of Brandy, by addition after its distillation, is the putting a counterfeit kind to the genuine : which may be done in any proportion. And it unfortunately happens, that this practice is as pernicious in its consequences, as frequent in its use : whence

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it becomes a matter of moment, that the nature and effects of it should be well understood.

IN order to shew the faultiness of such Brandy as is produced by a mixture of the genuine and counterfeit, it is absolutely requisite to examine the composition and qualities of the counterfeit kind used for that purpose: and this previously demands an investigation of the nature and properties of the ingredients of which it is compounded, as well as of the principles and manner of composition.

THIS counterfeit Brandy is made of malt spirits first rectified; and then again dulcified by redistillation with acids, principally of the kind called mineral.

THE rectification of malt-spirit, in order to make Brandy; or, as was said before, any other kind of palatable Spirituous Liquor; is absolutely necessary, on account of its always being impregnated in the first distillation, with a proportion of empyreumatic oil, commonly called the *FAINTS*; which gives a very disgusting smell and taste to the spirit. For this reason the malt spirit employed for making counterfeit Brandy is constantly redistilled, in order to its rectification; and some proper substance used in that operation, to assist in keeping down the empyreumatic oil, or *faints*.

THE substance most generally now employed in the rectification of malt spirits, for this purpose of keeping down the faints, is a medicinal preparation, called *Lapis infernalis* (a) : which name has been retained for it, since it has been applied to this use in distilling. The effect, this preparation has in the rectification of malt-spirits, is, the attracting the empyreumatic oil, or faints ; and preventing, consequently, its rising with the spirit.—But unluckily, it, also, attracts that proportion of acetous acid generated, as above mentioned, in the fermentation, by which the spirit is dulcified

(a) The *lapis infernalis* is, what modern chemists now call the caustic vegetable alkali. It is made by adding lime to pearl-ash, pot-ash, or any other vegetable alkaline salt, dissolved in water ; and, after they have stood together some time, drawing off the clear fluid, and evaporating it till a dry mass remain. This dry mass is the *lapis infernalis* : which is, in fact, only the alkaline salt, deprived, by the superior attraction of the lime, of the fixt air with which it was combined before their mixture with each other ; and which diminished its caustic power ; and varied some of its properties from what they are found when it is in a simple state.—This preparation has been long known in medicine, as a caustic ; and, from the severity of its operation, in that use of it, obtained the name of *lapis infernalis*. It has been much more lately applied to the purposes of distilling, in consequence of its being found to attract empyreumatic oils, such as form what are called the faints in distilled spirits ; and to prevent their rising with them.

dulcified to a certain degree; and, of course, wholly deprives the spirit of it. This effect of the *lapis infernalis*, together with the redistillation, brings the ardent spirit to that pure state, in which its noxious qualities prevail, according to what is demonstrated in *proposition the second*: and, consequently, though it answers the intended purpose of freeing the spirit of the faints, it causes a great depravity with respect to its wholesomeness.

At the time, when the late act of Parliament for the encouragement of the exportation of malt-spirits was in agitation, it was brought in question, whether the *lapis infernalis*, being a most violent caustic, might not have qualities that would be hurtful to persons who drunk the spirit, in the rectification of which, it had been used.—Those, who were examined in the House of Commons on this head, gave their opinion in the negative; and were certainly right with respect to the action of the *lapis infernalis* itself immediately on the persons drinking the spirits. For it does not rise in the distillation: and, if it did, a small proportion of it, diluted, as it would be in this case, could not be injurious: such quantities of sope ley, which is only this substance dissolved, as are beyond all comparison greater than what would be thus taken, being given very commonly in medicinal practice.—But though the *lapis infernalis* used in the rectification of malt-spirits is not, by its own immediate action, on those who drink such spirits, hurtful to them; yet, by
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its effects on the spirit, it is highly injurious : as it reduces the spirit to a noxious state ; which, as we shall see below, is not corrected in the subsequent preparation of the counterfeit Brandy, but rather aggravated by the addition of another ingredient possessed of the same qualities in a higher degree.

THE malt-spirit being thus rectified ; that is, brought to the state of a pure ardent spirit, induced consequently with all the noxious qualities of such spirit in their full force ; a necessity arises that it should be dulcified by combination with some acid, in order to convert it to counterfeit Brandy, by giving it the specious qualities that will make it resemble the true kind. This can only be done by means of such dulcification ; and it is requisite, that the acid employed, should, by its union with the spirit, not only suppress the fiery action of it on the mouth and throat, but impart to it, likewise, as far as may be, the peculiar flavour and smell of genuine Brandy.

THE acid, which most effectually communicates to pure spirit, by its union with it, the taste and scent of genuine Brandy ; and is, therefore, principally used in the preparation of counterfeit Brandy ; is, the *nitrous acid* ; commonly called *spirit of nitre*, or *aqua fortis (a)*.—This acid, when combined with
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(a) In the former attempts to make counterfeit Brandy, *spiritus nitri dulcis*, or dulcified spirit of nitre, vinegar,

the rectified spirit, raises a flavour and taste, much resembling those of Brandy; and suppresses the astringent,

vinegar, and the Florentine orris root, were distilled with rectified spirit. The Spirituous Liquor, thus obtained, had somewhat of the taste and smell of Brandy; but not in near so great a degree as that now made by those, who are most masters of their art.—The *spiritus nitri dulcis*, which was before only prepared for medicinal uses, was observed to have a strong grateful flavour and scent, resembling those of Brandy, which it would impart to rectified spirit of due strength: and it was, therefore, applied to the purpose of making counterfeit Brandy.—The vinegar, combining in some proportion with ardent spirit, when they are distilled together, and dulcifying it to a certain degree, was, therefore, likewise added for this purpose in the making the counterfeit Brandy: but some of the most volatile part is apt to come over in the distillation, uncombined with the spirit; and to give it a raw, sourish smell and flavour, not found in good Brandy.—The orris-root was used to give the nut-like flavour and smell admired in Brandy.

But this method was changed for one cheaper, and yet more effectual for the purpose. The *spiritus nitri dulcis*, which was purchased by the distillers of chemists, or of persons, who, preparing it for this purpose, sold it at a good price, was found, if used copiously, an expensive article: and spirit of nitre, being the only ingredient in the composition of it, besides rectified spirit, it soon became known, that this acid, in its simple state, might be substituted, with advantage,

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astringent, and seemingly fiery effect of the pure ardent spirit on the mouth and throat.—But unhappily this combination of the acid of nitre and ardent spirit, from which the counterfeit Brandy receives its specious qualities, will not resist the diluting action of water; but suffers the union of them to be destroyed by it; and, consequently, the effects which depended on that union. If a certain proportion of water be mixed with such Brandy, a separation of the ardent spirit, and acid follow, with respect to the union, by which they acted on each other, so as to produce the mutual change that made them resemble Brandy: and they only remain mixed with the water, as separate and distinct ingredients; having regained their original qualities, without any controul on each other (*a*).

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instead of the *spiritus nitri dulcis*. Whence, as it was also found to answer the end better, as well as more cheaply, it took place of the other; and is now the principal, and, in some cases, the only ingredient added to rectified spirits, to convert them into counterfeit Brandy.

(*a*) The destruction, by diluting the spirit below proof, of that union or combination of ardent spirit with spirit of nitre, on which the peculiar taste and smell of the compound of them depends, may be demonstrated by the following experiment: Take any quantity of *spiritus nitri dulcis*, which is, as has been shewn

ON this principle, we see counterfeit Brandy, when mixed with water, or taken into the stomach, where it immediately meets with a considerable quantity of diluting lymph, that acts on it as water, is immediately resolved into its two principal elements, pure ardent spirit, and spirit of nitre, unrestrained in the action of their proper qualities.—The noxious effects, on health of the pure ardent spirit, we have before investigated in the comment on *proposition the second* : and the spirit of nitre, when its properties are not changed by combination with some other body, has much the same astringent coagulating power, as the pure ardent spirit. So that being taken along with the spirit in the counterfeit Brandy, instead of correcting its bad qualities, it aggravates them by its own properties : and these two ingredients necessarily act with joint force, in injuring the health of those, who thus take them
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shewn above, this same compound ; and add to it ten or twelve times its quantity of rectified spirit, in strength at least proof. The mixture will retain the grateful taste and smell of the *spiritus nitri dulcis*. Put together the same quantities of *spiritus nitri dulcis* and water ; or even use a much less proportion of water. The peculiar taste and smell will be totally lost in the mixture : and the same effect only will be produced, as if so much ardent spirit and spirit of nitre had been added seperately to the water.

under the specious appearance and name of Brandy.

IT appears hence, that a more noxious preparation of distilled spirit cannot possibly be made, without the actual addition of poisonous substances than the common counterfeit Brandy. As the spirituous part has all the bad qualities of pure ardent spirit ; and the other part is formed of an ingredient, which has the same in a yet more powerful degree.

WITH this counterfeit Brandy, nevertheless, the far greater part of the sophistication of French Brandy for our consumption is made, by mixing them in such proportion, as the fordidness of the dealer, or his policy with respect to rendering the compound most advantageously marketable, prompts him to chuse.—Sometimes the counterfeit Brandy is added to the superior kind of true Brandy ; but more frequently to the inferior, made, as above mentioned, of the washings and pressings of the marc of the grapes. This last kind of Brandy acquires from the addition of the counterfeit, while the compound remains unmixed with water, a greater proportion of smell and flavour than it had in its simple state.

THE sophisticate Brandy, thus prepared, will necessarily partake of the bad qualities of the counterfeit kind, in proportion to the quantity mixed with it.—This quantity is certainly large
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in general : otherwise the whole of the distilled spirit produced to market with us, under the name of French Brandy, would not be equal by far to the present consumption.

THE most perfect Brandy, according to the principles here stated, must be greatly depraved and rendered noxious by the mixture of the counterfeit with it. The inferior kind, that in its simple state, is faulty, must, consequently, make with it a very pernicious compound. On the whole, therefore, the best kind of sophisticate Brandy, though it has the specious appearance of good, is by no means a wholesome Spirituous Liquor : and the worst kind is a very noxious one. Yet is the far greatest part of the Brandy ; that is drunk as genuine with us, and by many deemed to be preferable to Rum, as to wholesomeness, of this very kind : that is, a compound of some true Brandy with the noxious counterfeit preparation.

THE SEVENTH proposition, *that the most genuine Brandy is inferior in wholesomeness to Rum ; and that the sophisticate or counterfeit kinds of Brandy are very injurious to those who use them in considerable quantities ;* is already proved in the comments on the foregoing propositions. — It has been shewn with regard to propositions III, and IV, that the unwholesome qualities of pure ardent spirit are much more effectually corrected in Rum than Brandy : and the pernicious effects of sophisticate and counterfeit Brandy, are demonstrated

in the comment on *proposition the seventh*.—

There does not, consequently, remain any occasion here, to dwell on the explanation, or proof of this proposition : as is it a necessary deduction from the others ; which have been before demonstrated by clear principles and evident facts.

It may not be improper, however, to take notice of one specious objection, which is frequently brought against Rum, by those who would decry its wholesomeness. This objection is, that it contains an empyreumatic oil, which rises on the stomach ; and disagrees with it in some persons. But this effect, where it happens, is rather an inconvenience than an injury to such persons : as it only causes a disagreeable sensation, but does no real prejudice to the health. The quality of thus rising on the stomach, is, moreover, found only in new rum of inferior goodness ; where the volatile oil, generated by burning the unfermented sugar in the distillation, abounds too much ; or has not had due time to be combined with the spirit. In those cases, a separation of such oil is made in weaker stomachs ; and occasions a slight degree of heart-burn, of no more consequence than that caused by any thing else eaten or drunk, where the digestion is not perfect. The slight disorder thus produced, is, therefore, merely temporary ; and does not tend to mischievous consequences, like those caused by the qualities above-mentioned, which subsist in Brandy, sophisticated, or counterfeit, or other kinds of bad Spirit-

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ous Liquors, in which the spirit is not duly dulcified. But even such a redundance or depravity of the volatile oil is never found in Rum, where age is not wanting; or where it was not originally faulty by the neglect of management in the distillation. For no Spirituous Liquor digests more kindly, or assists digestion more efficaciously than good Rum, sufficiently diluted, and drunk in proper quantity. I have, indeed, seen the use of it effectual in some chronical cases of bad digestion, where all other means of relief have failed.

THIS objection made unjustly against Rum in general, on the score of a quality which is peculiar alone to such as is faulty, ought, however, to induce those, who have concerns in the distillation of it, to be extremely careful in that operation. The depravity complained of, is owing principally to the Rum's being *still-burnt*, as it is called: which happens either from too great a crust of the unfermented sugar, or feculencies in the distilling liquor, being suffered to collect on the sides of the still; or to the not keeping a sufficient quantity of fluid in the still, towards the end of the operation. For it is at that time, the worst part of the Rum rises: what first comes off being generally good; and always the best of the same distillation: as is well known to the sugar-planters; who dilute the first spirit that comes over with spring water; and thence obtain the finest Rum, when wanted for their own use. It may be proper, on the same account, to repeat the hint here to those, who keep Rum
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for any long time in their possession, to continue it in the cask ; and not to put it in bottles. For, as has been before mentioned, it does not improve in bottles near so much as in the cask.

ON the above view of the subject, it is clearly evinced, that Rum is a much more safe and wholesome liquor than Brandy, by arguments drawn from the principles of chemistry, experiments on the different kinds of distilled spirits, and physiological observations.—But there is yet another authority for asserting this important truth. I mean the declared opinion, founded on observation of physicians and other medical persons of the most extensive practice and acute judgment : who in general agree in allowing Rum to be far preferable to Brandy, with respect to health. This is corroborated, likewise, by the experience of great numbers of others, who have made trial of both these Spirituous Liquors ; and concur in affirming, they have found a difference of their qualities in favour of Rum. The comparative effects of Rum and Brandy, on the health, have been, also, noted at sea : where they are particularly distinguishable : when it has happened, that in failure of being able to procure the former, the latter has been substituted. The decline of health, that has followed, has been exceedingly conspicuous on this change from the use of Rum to that of Brandy : numbers contracting disorders, they were before free from.

IN every light of examination, therefore, the preference of Rum even to the best Brandy, if it could be procured, appears most clearly manifest : and the very strong reason for the use of Rum instead of Brandy, considering the almost general sophistication of such Brandy as is to be now obtained, together with the noxious depravity of it from that sophistication, is, also, most obviously displayed on incontestible principles.—It is, therefore, hoped, that a due regard will be given to this most interesting monition, not to fall into the error here refuted, that Brandy is wholesomer than Rum ; an error replete with so many bad consequences to the public, as well in other respects as from the injury done to the health of those individuals, who are so unfortunate as to embrace it,

HOWEVER unnecessary it may appear, I cannot, after what I have said of the good effects of some Spirituous Liquors, conclude, without giving an earnest exhortation that they be always drunk with moderation and temperance : otherwise the best may prove detrimental.—The limits of the quantum of such Spirituous Liquors, which constitute this moderation, cannot be ascertained or reduced to any rule or standard : as they depend on the difference of climate, constitution of each person, and other particulars, which vary greatly. But, in the case of each individual, whatever quantity infringes on sobriety, or brings on any disorder, should be diminished.—It is always proper, likewise, that in the habitual use of distilled spirits, they should be diluted,

diluted; that is, mixed with water, beer, milk, or some other small liquor: which renders them more mild and gentle in their action on the stomach and intestines.—It may be well to observe further, that the too copious use of those very astringent acids, the juice of lemons and limes, along with the distilled spirits, has greatly promoted the injury done to the health of those, who have drunk them to excess; and been, in many cases, the sole occasion of the disorders imputed to the distilled spirits. In cachectic and gouty habits, such acids, even in smaller quantities, never fail to do harm: and great quantities do mischief in almost every constitution. It is well known, that while the custom of drinking plentifully of small punch, made very sour with lime juice, prevailed in our West-Indian colonies, a much greater number of bad and fatal diseases, were contracted than are observed at present among those, who drink punch with less acid in proportion to the spirit.—The juice of oranges, and milder fruits, taken with the distilled spirits, is less detrimental: but that of lemons and limes ought always to be admitted sparingly, and with caution.—Under these restrictions, the use of good Spirituous Liquors, especially Rum, may be deemed innocent in general; and, in some cases above-mentioned, salutary and medicinal.

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